



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,001	06/11/2004	Renee T. Mo	FIS920040044US1	4000
32074	7590	12/30/2005	EXAMINER	
INTERNATIONAL BUSINESS MACHINES CORPORATION DEPT. 18G BLDG. 300-482 2070 ROUTE 52 HOPEWELL JUNCTION, NY 12533				ISAAC, STANETTA D
ART UNIT		PAPER NUMBER		
		2812		
DATE MAILED: 12/30/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	A6
	10/710,001	MO ET AL.	
	Examiner Stanetta D. Isaac	Art Unit 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 13 October 2005.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 1,4,5,10-19 and 21 is/are allowed.

6) Claim(s) \_\_\_\_\_ is/are rejected.

7) Claim(s) 2,3,20 and 22 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 11 June 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## **DETAILED ACTION**

This Office Action is in response to the amendment filed on 10/13/05. Currently, claims 1-22 are pending.

### ***Specification***

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 3 recites the limitation ""said wafer" in lines 2, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim 20 recites the limitation "said implanted areas" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "after said step" in line 5. There is insufficient antecedent basis for this limitation in the claim.

***Allowable Subject Matter***

Claims 2, 3, 20 and 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 1, 4, 5, 10-19 and 21 are allowed over prior art of record.

The following is an examiner's statement of reasons for allowance: The closest prior art of record, Sato et al., US Patent 6,798,038, alone or in combination thereof, fails to show the following steps of:

Pertaining to independent claims 1 and 10, "depositing a single deposition step an isolation insulator layer in said isolation apertures to a depth sufficient to fill said isolation apertures above said device layer by a first margin that is less than the thickness of said pad insulator..." and "etching said pad insulator layer with an etchant that does not attack said isolation insulator layer, whereby said pad insulator and said remaining portion of said isolation insulator layer are removed in the same step and said isolation plugs fill said apertures without CMP."

Pertaining to independent claim 19, "etching said isolation insulator layer such that said sidewall thickness of said isolation insulator on said isolation aperture walls is removed and remaining isolation plugs of said insulator layer fill said apertures substantially coplanar with said device layer, without CMP" and "etching said pad insulator layer with an etchant that does not attack said isolation insulator layer, whereby said pad insulator and said remaining portion of

said isolation insulator layer are removed in the same step and said isolation plugs fill said apertures without CMP.”

Pertaining to independent claim 21, “...performing before said step of forming set of apertures in areas of pad insulator...”

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

This application is in condition for allowance except for the following formal matters:

Pertaining to claims 2, 3, 20 and 22, a rejection under second paragraph of 35 U.S.C. 112.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stanetta D. Isaac whose telephone number is 571-272-1671. The examiner can normally be reached on Monday-Friday 9:30am -6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lebentritt can be reached on 571-272-1873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**MICHAEL LEBENTRITT**  
**SUPERVISORY PATENT EXAMINER**

Stanetta Isaac  
Patent Examiner  
December 23, 2005